



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Khosro Shamsaifar.

Art Unit: 2817

Appl. No.: 10/051,144

Examiner: Kimberly E. Glenn

Filed: 01/17/2002

Atty Docket: JSF01-0064(WJT08-0040)

For: **ELECTRONICALLY
TUNABLE COMBLINE FILTER
WITH ASYMMETRIC RESPONSE**

AFFIDAVIT UNDER RULE 1.132

STATE OF MARYLAND)
) SS
COUNTY OF HOWARD)

Yongfei Zhu, being duly sworn, does hereby depose and say as follows:

That he is currently a senior engineer at Paratek Microwave, Inc. That he has expert knowledge in the area of dielectric varactors and in particular dielectric varactors using Paratek's trademarked Parascan tunable material – the same material utilized and described in detail in the above referenced patent application. Further, he is a named inventor on the cited US Patent No, 6,686,817 "ELECTRONIC TUNABLE FILTERS WITH DIELECTRIC VARACTORS."

That in addition to the aforementioned patent, for which he has extensive knowledge, he has also examined US Patent No. 5,543,764, "FILTER HAVING AN ELECTROMAGNETICALLY TUNABLE TRANSMISSION ZERO" and has examined the present application. In his expert opinion, based upon years of experience with tunable dielectric material and filters, and for the reasons set forth below, he believes that it would not be obvious to one of ordinary skill in the art (or one of expert skill in the art such as himself) to combine, at the time of the present invention, the three patents (US

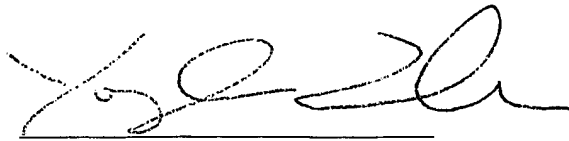
Patent No. 6,686,817, US Patent No. 6,597,265 and US Patent No. 5,543,764) to derive a device that is described in the present application and claimed by the following claim:

1. A voltage-controlled tunable filter including:
 - an input;
 - an output;
 - a plurality of resonators serially coupled to each other and to the input and the output;
 - a plurality of tunable capacitors, each of the tunable capacitors being coupled to one of the resonators;
 - said tunable capacitors comprising, a first electrode; a tunable dielectric film positioned on the first electrode; and a second electrode positioned on a surface of the tunable dielectric film opposite the first electrode. and
 - means for coupling non-adjacent ones of the resonators, thereby enabling the capability of providing an asymmetric response.

Affiant submits the present invention, as the title implies, provides an electronically tunable combline filter with asymmetric response. This is accomplished at least in part because of the “coupling non-adjacent ones of the resonators” with the resonators having voltage controlled tunable capacitors therein. Affiant further submits that in contrast to Turunen, which provides “conductive transmission line 8, 9, 10; 5, 6, 7 that produce the phase difference of a signal passing through the conductive transmission line 8, 9, 10; 5, 6, 7”, the present invention is capable of asymmetric response because it is not merely coupling resonators, but rather resonators that are made tunable by incorporating tunable varactors therein.

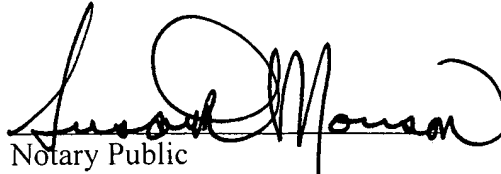
Lastly, Affiant submits it would not be obvious to cross couple the resonators with tunable varactors to obtain an asymmetric response as it has taken the present inventors and co-workers at the assignee of the present invention (which is also the assignee employing the inventors of two or the three cited art) much experimentation and research and development to attain the response results with the present performance.

Further deponent sayeth not.



Yongfei Zhu

Sworn and subscribed to before me this 15 day of July 2005.


Notary Public

My commission expires ~~SUSAN DEBERA MORRISON~~
~~NOTARY PUBLIC STATE OF MARYLAND~~
My Commission Expires January 9, 2008

